The Many Faces of Silicon and SILICON

David A. Schiraldi¹

Published online: 10 November 2019
© Springer Nature B.V. 2019

It is difficult to argue against the idea that if the twentieth century was one of synthetic organic materials, then the twenty-first century is unfolding as that of silicon-based materials. The phenomenal growth of computer applications and computing power has and continues to change our daily lives. From computers to cell phones to the nascent “internet of things” one could not have predicted how that wonderfully stable element, sitting below carbon in the periodic table, would change society. As an undergraduate student in La Jolla, California, I visited a nuclear facility near the UCSD campus which was carrying out neutron activation analysis of slabs of gray solid stacked on their grassy lawn. The tour guide informed us that that material was the world’s supply of semiconductor grade silicon, being tested for parts per billion impurities – none of us students could fathom the implication of that encounter four decades ago. As I write (on a computer)

this editorial in my home office, a wireless device sits on my desk, following the performance of a meat smoker in my back yard, preparing tonight’s dinner. All enabled by silicon.

The present issue of SILICON encompasses a number of special topics, ranging from biomedical and bioactive silicon materials, to use of silicon-based structures in energy applications, and silicon-based polymers and polymer composites. These foci represent only a fraction of the end uses that silicon finds and *will find* in the coming years. We hope that you enjoy reading these collections of papers and will in turn contribute the next generation of innovations for the readership to SILICON to benefit from.

Publisher’s Note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

✉ David A. Schiraldi
das44@case.edu

¹ Department of Macromolecular Science & Engineering, Case Western Reserve University, Cleveland, OH 44106, USA